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THE GENUS *MICRATHENA* (ARANEAE, ARANEIDAE)
IN THE WEST INDIES

BY ARTHUR M. CHICKERING

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No. 8—*The Genus Micrathena (Araneae, Araneidae)*
in the West Indies

BY ARTHUR M. CHICKERING

In connection with my study of the genus *Micrathena* in Central America (1961) and South America (1960a, b, c), I have recently had the opportunity to study all specimens of the genus from the West Indies now in the collections of the Museum of Comparative Zoology at Harvard College. During the summer of 1958 I had the privilege of studying the West Indian specimens of *Micrathena* in the extensive collections of the British Museum (Natural History); the collections of the American Museum of Natural History have also been made available to me. As a result of my study I have found what I believe to be serious confusion in the identification of certain species native to the West Indies. It is also obvious that errors of synonymy have been made. I hope this paper will contribute to clarification of the difficulties.

I believe there is urgent need for some competent worker to study the whole genus for the entire Western Hemisphere with the intention of publishing a complete revision of the genus that would serve for many years, as Reimoser's (1917) work did for a generation. This extensive piece of work should be preceded by intensive collecting in the West Indies and, especially, in the tropical regions of South America. I am convinced that such field work would yield excellent results. Not only would new and interesting species be found but much progress could be made in the now difficult problem of correctly matching up the sexes.

Acknowledgments extended and appreciation expressed in recent published papers (Chickering, 1960a, b, c, and 1961) are here repeated with my personal gratitude for encouragement over many years. I also wish at this time to express my gratitude and appreciation to Dr. W. J. Gertsch, American Museum of Natural History, for the loan of a valuable collection.

Holotypes of *M. levii*, *M. gertschi*, and *M. praeterita* will be deposited in the American Museum of Natural History, New York City. Holotypes of all other new species will be deposited in the Museum of Comparative Zoology, Harvard University.

MICRATHENA Sundevall, 1833

Type species, *M. clypeata* (Walckenaer, 1806), designated by Simon, 1895:859.

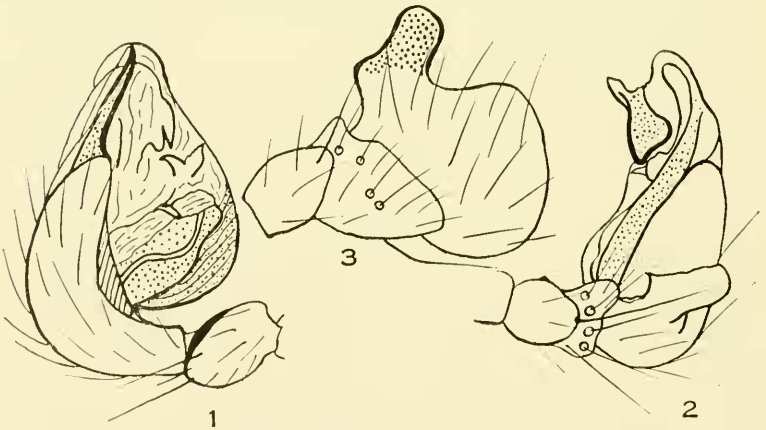
MICRATHENA BRYANTAE sp. nov.

Figures 1-3

Note: Miss Bryant (1940) described briefly a single male from Cuba, but she did not give a specific name to it. I propose regarding it as the holotype of a new species and posthumously honoring its discoverer in its specific name.

Male holotype. Total length 4.4 mm. Carapace 1.76 mm long; 1.17 mm wide opposite posterior border of second coxae where it is widest; 0.59 mm tall at region of central fovea, which is a well marked circular pit; gently arched from PME to posterior declivity, with a pair of distinct dorsolateral foveae in the cephalothoracic groove.

Eyes. Ocular tubercles moderately well developed. Viewed from above, both eye rows moderately recurved; viewed from in front, anterior row gently recurved, posterior row definitely procurved, all measured from center. Central ocular quadrangle wider behind than in front in ratio of 21:19, slightly wider behind than long. Ratio of eyes AME:ALE:PME:PLE = 7:6.5:10:6 (long diameter used where differences exist). AME separated from one another by a little less than their diameter, from ALE by three times their diameter. PME separated from one another by about three-fifths of their diameter, from PLE by two and one-fifth

External Anatomy of *Micrathena*Figures 1-3, *M. bryantae*

Figs. 1-2. Two views of the left palpal tarsus, tibia and patella.

Fig. 3. Nearly dorsal view of base of left palpal cymbium with basal tarsal hook, tibia and patella, more enlarged.

times their diameter. Laterals separated from one another by slightly less than one-third of the diameter of PLE. Height of clypeus equal to twelve-sevenths of the diameter of AME.

Chelicerae. Fairly robust; basal segment about 0.54 mm long; teeth along fang groove not observed because of fragility of the holotype.

Sternum. Scutiform in general; tubercles barely indicated; continued laterally between coxae and posteriorly between fourth coxae as slender sclerites; fourth coxae barely separated; surface very finely rugulose.

Legs. 4123. Width of first patella at "knee"¹ 0.16 mm, tibial index of first leg 11. Width of fourth patella at knee 0.15 mm, tibial index of fourth leg 11.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
(All measurements in millimeters)						
I.	1.43	0.50	0.91	0.99	0.52	4.35
II.	1.37	0.49	0.78	0.85	0.48	3.97
III.	0.85	0.29	0.49	0.52	0.36	2.51
IV.	1.76	0.36	0.98	1.07	0.49	4.66
Palpus	0.33	0.12	0.15	—	0.66	1.26

Legs with few spines; these mostly broken off from handling. Hook on first coxa and corresponding ridge and groove on second femur lacking.

Palpus. See Miss Bryant's figure 143 (1940) for one view of the palpal tarsus and tibia, and Figures 1-3 in this paper for other views.

Abdomen. Length 2.73 mm; nearly rectangular in dorsal view (Miss Bryant's fig. 139); only moderately flattened; very little, if any, indication of suppressed spines.

Color in alcohol. See Miss Bryant's description (1940).

Type locality. The male holotype is from Cuba, Oriente, Los Llanos, 1000-2000 ft. elevation, July 16-20, 1936 (P. J. Darling-ton, Jr.).

Other records. A male in the American Museum of Natural History collected in Cuba, Soroa, Piñar del Rio, June 2, 1955 (A. F. Archer). This specimen was with an immature *M. forcipata* (Thorell), and a palpus from another male was found with females of *M. forcipata* (Thorell) taken in Cuba, Siboney, Oriente, November 17, 1945 (P. Olayo).

¹The term "knee" is defined as the place of articulation of the patella with the femur; it is straight and easily measured. The term and its usage have been borrowed from Petrunkevitch's (1929, Trans. Connecticut Acad. Arts Sci., 30:11) method of deriving the tibial index. Tibial index is defined as width of patella \times 100, divided by combined length of patella and tibia.

MICRATHENA CUBANA (Banks), 1909

Figures 4-10

Acrosoma cubana Banks, 1909. Juvenile holotype from San Diego de los Baños, Cuba, lost.

Micrathena cubana, Bryant, 1940; Roewer, 1942; Bonnet, 1957.

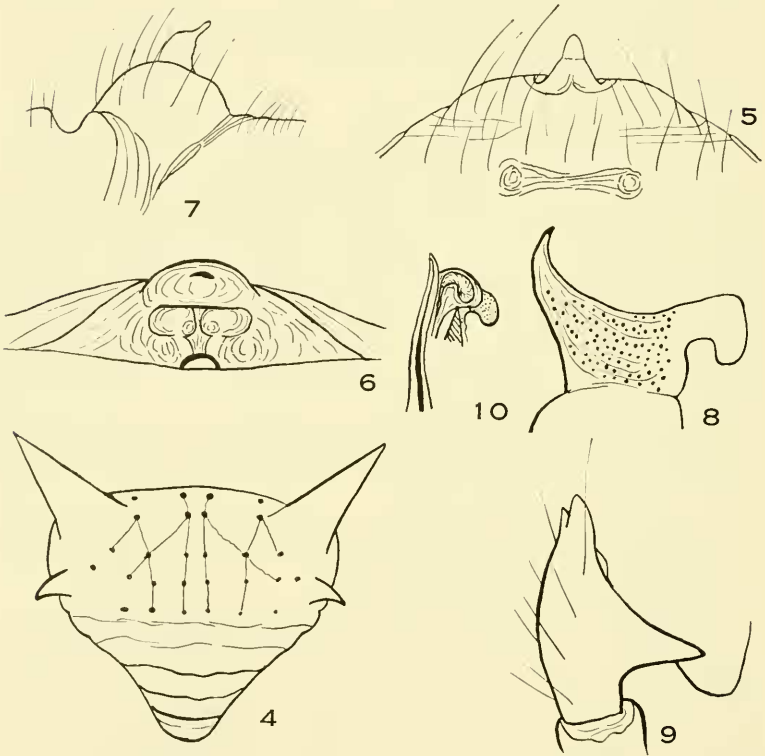
External Anatomy of *Micrathena*Figures 4-10, *M. cubana*

Fig. 4. Posterior end of female.

Figs. 5-7 Epigynum from below, in posterior view, and in profile, right side, respectively.

Fig. 8. Palpal tarsal hook of male.

Fig. 9. Palpal tibia of male to show characteristic form.

Fig. 10. Embolus and closely associated structures in male palpal tarsus, more enlarged.

Female. In addition to the abdominal spines described by Miss Bryant, there appear to be the remains of a reduced pair a short distance in front of the long, posterior pair. The appearance of the two pairs of posterior spines is shown in Figure 4. I see the epigynum as somewhat different from the figures accompanying Miss Bryant's description, and for that reason have provided Figures 5-7.

Male. Total length of the male 5.07 mm. Small remains of the two pairs of posterior spines show fairly clearly. Palpus: the basal tarsal hook is curiously developed (Fig. 8); the tibia also has a characteristic form (Fig. 9); the embolus and related structures are also more or less distinctive (Fig. 10). There is no ventral hook on the first coxa and, of course, the corresponding ridge and groove on the prolateral surface of the second femur are also lacking.

Collection records. With the possible exception of one specimen from the Dominican Republic, all of the numerous specimens examined are from Cuba; they are from many localities in this island. No males have been seen except those reported by Miss Bryant.

MICRATHENA FORCIPATA (Thorell), 1859

Figures 11-16

Acrosoma forcipatum Thorell, 1859. Female holotype from Cuba, in the Natural History Museum, Stockholm. Butler, 1873; Petrunkevitch, 1911; Bryant, 1940.

Acrosoma flavomaculata Keyserling, 1864. Female holotype from Haiti, in the British Museum (Nat. Hist.). Butler, 1873; Keyserling, 1892.

Micrathena flavomaculata, Simon, 1895; Petrunkevitch, 1911; Reimoser, 1917; Roewer, 1942; Bonnet, 1957.

Micrathena sexspinosa, Reimoser, 1917; Roewer, 1942; Bonnet, 1957. Not *M. sexspinosa* (Hahn).

During my visit to the British Museum (Natural History) in 1958 I had the opportunity to study Keyserling's types of *M. flavomaculata* and to make drawings of the epigynum and the abdomen. Since then I have been able to study several specimens of *M. forcipata* (Thorell) and I have been forced to conclude that *M. flavomaculata* and *forcipata* are the same species.

As Miss Bryant (1940) pointed out, Reimoser was clearly in error when he synonymized *M. forcipata* (Thorell) with *M. sexspinosa* (Hahn). Roewer (1942) and Bonnet (1957) have both followed Reimoser. There are very clear and definite differences between these two species in both sexes and there should be no further confusion regarding their separation.

Female. Total length of Keyserling's type of *M. flavomaculata* from base of chelicerae to posterior end of abdomen in midline, 8.97 mm; from base of chelicerae to opposite tips of large posterior spines, 11.5 mm. Corresponding measurements of a fairly typical specimen of *M. forcipata* (Thorell) from Cuba, 8.26 mm and 11.83 mm. The four typical pairs of spines are well shown in Miss Bryant's figure 149 but important variations have been noted; the anterior pair may be almost eliminated in certain specimens and

External Anatomy of *Micrathena*

Figures 11-16, *M. forcipata*

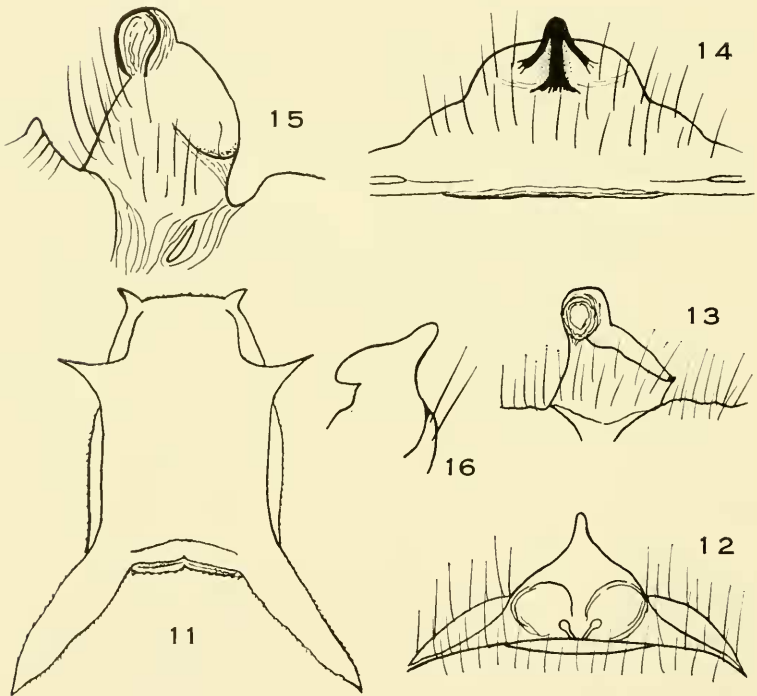


Fig. 11. Dorsal view of abdomen, taken from type of *M. flavomaculata* (Keyserling).

Figs. 12-13. Epigynum of type of *M. flavomaculata* (Keyserling) from behind, and in profile from right side, respectively.

Figs. 14-15. Epigynum of typical *M. forcipata* from Cuba from below, and in profile from right side, respectively.

Fig. 16. Palpal tarsal hook of male, nearly posterior view.

the typically claviform, long, posterior spines may show no distal swelling. The appearance of the epigynum (Figures 12-15) seems to be consistent. Cephalic part of carapace somewhat raised; median fovea a well-defined oval pit transversely situated; three pairs of dorsolateral foveae are developed in varying degrees in different specimens. Sternum with a well-defined, small, posterior tubercle.

Male. There may still be some doubt about the correct matching of the sexes in this species, as concluded by Miss Bryant, but I think it highly probable that she was correct. Her figures 141 and 146 show the male abdomen and palpus. The palpal tarsal hook is shown in Figure 16 in this paper. Contrary to Miss Bryant's statement concerning the absence of a ventral hook on the first coxa, I find a moderately well-developed hook together with the expected chitinized ridge and groove on the prolateral surface of the second femur near the proximal end. The male color pattern appears to be modified from that of the female.

Collection records. Males are rare in collections; I have seen only the specimen described by Miss Bryant. Females have been taken in many localities in Cuba. I have seen a female from Carrefour, Haiti, collected by A. F. and M. H. Archer on July 22, 1955, and another female taken two miles east of Cayes du Jaemel, Haiti, Sept. 2, 1935, by W. G. Hasler.

MICRATHENA GENTILICIA sp. nov.

Figures 17-22

The specific name *gentilicia* is a Latin adjective meaning belonging to the group.

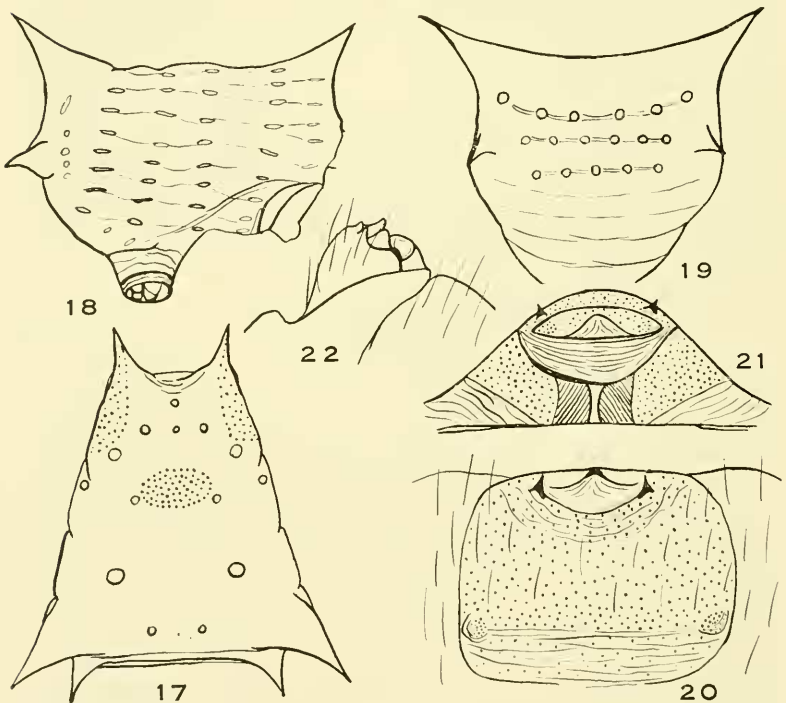
Female holotype. Total length 4.55 mm to posterior end of lower posterior spines; total length to posterior end of abdomen between these spines 4.36 mm. Carapace 1.76 mm long; 1.17 mm wide just behind second coxae where it is widest; about 0.59 mm tall; the median fovea is a small, shallow pit; without dorsolateral foveae.

Eyes. Viewed from above, anterior row strongly recurved, posterior row moderately so; viewed from in front, anterior row nearly straight, posterior row strongly procurved, all measured from center. Median eyes on a moderately raised tubercle; lateral eyes likewise. Central ocular quadrangle wider behind than in front in ratio of 14:9; wider behind than long in ratio of 14:11. Ratio of eyes AME:ALE:PME:PLE = 5:5:9:6 (lateral eyes very oval; long

diameters used for measurements). AME separated from one another by about five-thirds of their diameter, from ALE by about four times their diameter. PME separated from one another by a little more than one and one-half times their diameter, from PLE by about nine-fourths of their diameter. Laterals separated from one another by the radius of ALE. Height of clypeus equal to eight-fifths of the diameter of AME.

Chelicerae. Short, fairly robust; quite gibbous in front in basal half; impossible to view teeth on margins of fang groove without damage to holotype; a paratype has four teeth on promargin with

External Anatomy of *Micrathena*
 Figures 17-22, *M. gentilicia*



Figs. 17-19. Abdomen in dorsal, right lateral, and posterior views, respectively.

Figs. 20-22. Epigynum from below, in posterior view, and in profile, right side, respectively.

the largest in third place from base of fang, and three teeth on the retromargin with all nearly uniform in size.

Sternum. Quite convex; lateral tubercles not evident; not continued between fourth coxae, which are separated by only about one-sixth of their width.

Legs. 4123. Width of first patella at knee 0.17 mm, tibial index of first leg 12. Width of fourth patella at knee 0.19 mm, tibial index of fourth leg 13.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.36	0.53	0.86	0.84	0.53	4.12
II.	1.28	0.51	0.75	0.75	0.53	3.82
III.	0.90	0.35	0.52	0.51	0.44	2.72
IV.	1.65	0.48	0.95	0.99	0.55	4.62

Legs with few spines but with many setigerous tubercles. Numerous trichobothria on tibiae, metatarsi, and tarsi.

Abdomen. General form with spination shown in Figures 17-19. There is no evidence of additional small spines on available paratypes.

Epigynum. Rather complicated; the pattern has not been seen in other species (Figs. 20-22).

Color in alcohol. Carapace brownish, darker through median region; much darker along ventrolateral margins. Sternum yellowish with black flecks and irregular black spots. Legs brownish with variations. Abdomen with a complicated color pattern: there is an oval, central, dorsal, white spot (stippled in Fig. 17); the lateral sides of the anterior spines and adjacent lateral abdominal walls are whitish; additional pairs of white spots on the dorsum and lateral sides are irregular, somewhat indefinite and difficult to describe adequately, and probably highly variable; the venter is nearly black through the broad center, with white on each side.

Type locality. The holotype and three paratype females were collected in Trinidad, W. I., between 1934 and 1936, by N. A. Weber but no further data are given on the labels. The male is not known.

MICRATHENA GERTSCHI sp. nov.

Figures 23-29

Male holotype. Total length about 4.55 mm (body somewhat distorted). Carapace 1.78 mm long; 1.20 mm wide opposite interval between second and third coxae where it is widest; with the usual

nearly circular central fovea; somewhat overlapped by anterior border of abdomen; essentially typical of males of the genus.

Eyes. Lateral tubercles moderately well developed; AME located on a well-developed tubercle considerably extended forward over the clypeus. Viewed from above, both rows strongly recurved; viewed from in front, anterior row gently recurved, posterior row gently procurved; all measured from center. Central ocular quadrangle wider behind than in front in ratio of 20:17; nearly as long as wide behind. Ratio of eyes AME:ALE:PME:PLE = 6:5:7:4.5 (laterals irregular in outline). AME separated from one another by about 1.5 times their diameter, from ALE by about ten-thirds of their diameter. PME separated from one another by about nine-sevenths of their diameter, from PLE by about three times their diameter. Laterals separated from one another by about one-third of the diameter of PLE. Clypeus strongly receding; height equal to about twice the diameter of AME.

Chelicerae, Maxillae, and Lip. Difficult to examine without injury to the holotype; apparently typical of males of the genus.

Sternum. Oval in general outline; extended between all coxae; fourth coxae separated by two-thirds of their width; with numerous stiff, black bristles.

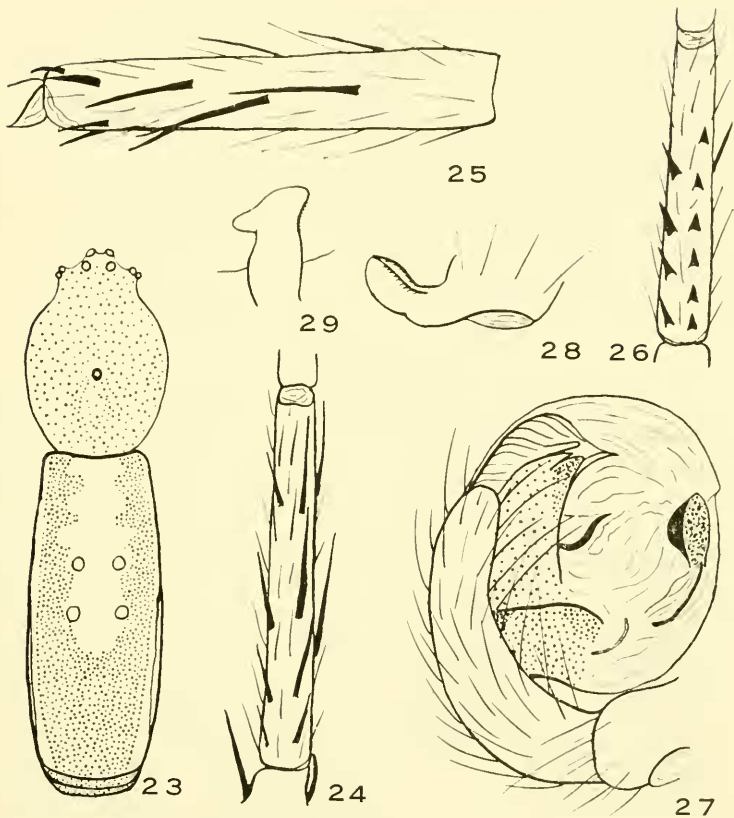
Legs. 1423. Width of first patella at knee 0.16 mm, tibial index of first leg 11. Width of fourth patella at knee 0.14 mm, tibial index of fourth leg 12.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.54	0.44	1.06	0.91	0.42	4.37
II.	1.39	0.40	0.81	0.70	0.41	3.71
III.	0.77	0.29	0.35	0.44	0.31	2.16
IV.	1.54	0.35	0.81	0.88	0.42	4.00
Palpus	0.31	0.13	0.15	—	0.55	1.14

The characteristic ventral spines on the first and second tibiae are shown in Figures 24 and 26. Spines on the first femur as seen in prolateral view are shown in Figure 25. The ventral hook on the first coxa is small and pointed; the corresponding prolateral, chitinized ridge and groove on the second femur are moderately well developed near its proximal end. Trichobothria occur on the tibiae but not elsewhere.

Palpus. Figures 27-29. The basal tarsal hook appears to be distinctive. The tibia is conservative.

Abdomen. Figure 23; only slightly flattened dorsoventrally; the spinnerets are located only a little behind the middle of the venter and are surrounded by a poorly chitinized ring.

External Anatomy of *Micrathena*Figures 23-29, *M. gertschi*

- Fig. 23. Body of male, dorsal view.
 Fig. 24. Right first tibia, ventral view.
 Fig. 25. Right first femur, prolateral view.
 Fig. 26. Right second tibia, nearly ventral view.
 Fig. 27. Left palpal tarsus.
 Fig. 28. Left basal palpal tarsal hook and base of cymbium.
 Fig. 29. The same from nearly posterior view.

Color in alcohol. Legs yellowish with variations. Mouth parts brownish. Palpi like legs except that cymbium is very dark brown. Carapace medium brown with fine, dark, irregular dots; a lighter area extends from the median fovea to the posterior border. The

sternum is brown with darker streaks. Abdomen: the dorsum is brown with a nearly white spot in the middle and a light streak extending through the middle from the white spot to the anterior border; the sides are yellowish with many irregular, whitish flecks; the venter has a brownish median stripe with many small, yellowish flecks.

Type locality. The holotype male is from Simla, Trinidad, W. I., December 12, 1954 (A. M. Nadler).

Other records. One paratype male is also from Simla, February 26, 1959 (A. M. Nadler), and another is from Diego-Martin, Trinidad, W. I., Sept. 8, 1946 (R. H. Montgomery). The female is unknown.

MICRATHENA LEPIDA sp. nov.

Figures 30-34

Several females of a single species have recently been found in a collection in the Museum of Comparative Zoology, all taken on the Island of Trinidad, W. I., by R. Thaxter and Dr. P. J. Darlington, Jr. The males described in this paper as *M. nitida* were found with some of these females and there is a suspicion that they belong together. However, as several other kinds of females were also present in the collection, it seems undesirable to unite *M. lepida* and *nitida* until there are more data regarding their relationship. One of the females has been selected as the holotype of *M. lepida*. This species appears to belong in the group including *M. sagittata* (Walckenaer) and *M. gladiola* (Walckenaer). The name *lepida* is a Latin adjective meaning pleasant.

Female holotype. Total length to posterior border of abdomen 5.56 mm; to tips of posterior spines 6.05 mm. Carapace considerably overlapped by anterior end of abdomen; about 2.28 mm long; about 1.95 mm wide opposite second coxae where it is widest; median fovea hardly visible as a shallow depression; without dorsolateral foveae; of moderate height; without gibbosity posterior to median fovea; ocular tubercles only moderately developed.

Eyes. Posterior row slightly longer than anterior row. Viewed from above, anterior row strongly recurved, posterior row only moderately so. Viewed from in front, anterior row nearly straight, posterior row moderately procurved, all measured from center. Ratio of eyes AME:ALE:PME:PLE = 10:8.5:12:8.5. AME separated from one another by their diameter, from ALE by nearly four times their diameter. PME separated from one another by slightly more than 1.5 times their diameter, from PLE by nearly

External Anatomy of *Micrathena*
 Figures 30-34, *M. lepida*

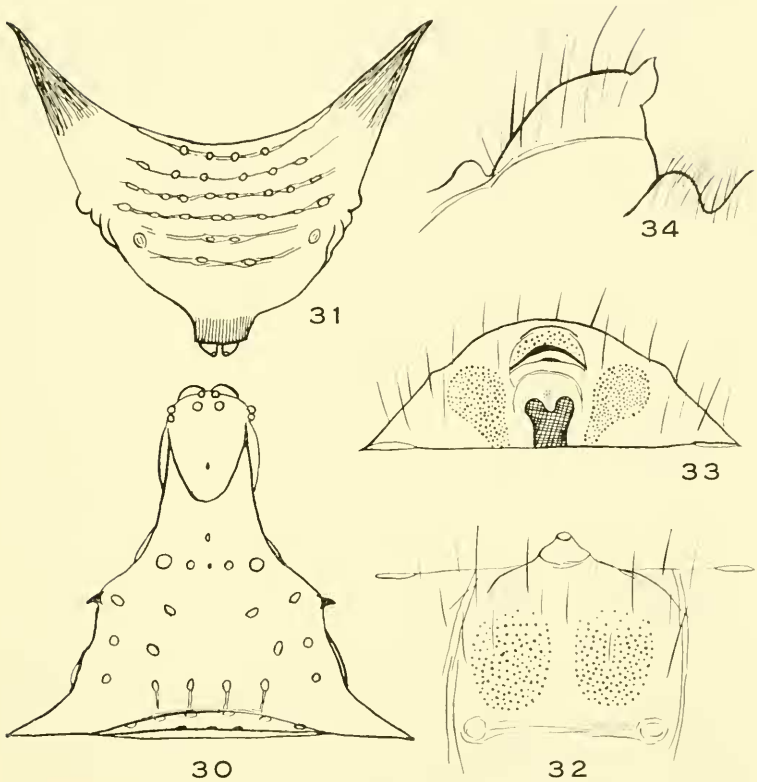


Fig. 30. Body of female, dorsal view.

Fig. 31. Posterior end of abdomen of female.

Figs. 32-34. Epigynum from below, in posterior view, and in profile, right side, respectively.

three times their diameter. LE separated from one another by a little less than their radius. Central ocular quadrangle wider behind than in front in ratio of about 10:7; wider behind than long in ratio of about 4:3. Height of elypeus equal to slightly more than the diameter of AME.

Chelicerae. Moderately robust, parallel, with basal boss well developed as a chitinous ridge; fang groove with four teeth along promargin and three along retromargin.

Lip. Wider than long in ratio of about 11:6, reaching somewhat beyond middle of maxillae.

Sternum. Scutiform as usual; moderately convex but not raised into a cone as in *M. gladiola* (Walckenaer); lateral tubercles only moderately developed; not extended between fourth coxae, which are separated by slightly more than one-half of their width; sternal suture gently procurved.

Legs. 4123. Width of first patella at knee 0.22 mm, tibial index of first leg 11. Width of fourth patella at knee 0.24 mm, tibial index of fourth leg 13.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
(All measurements in millimeters)						
I.	2.02	0.72	1.30	1.20	0.65	5.89
II.	1.95	0.65	1.11	1.11	0.59	5.41
III.	1.37	0.46	0.73	0.72	0.55	3.83
IV.	2.47	0.65	1.25	1.43	0.72	6.52

Legs with few spines but with many setigerous tubercles; especially true of femora.

Abdomen. Closely resembling that of *M. gladiola* (Walckenaer), but distinct (Fig. 30). There are three pairs of spines, but no indications of the small posterior spines that occur on both *M. sagittata* and *M. gladiola*.

Epigynum. Figures 32-34. Variation of this organ may be caused by injuries incurred in handling.

Color in alcohol. Carapace reddish brown with irregular lighter and darker streaks. Legs light reddish brown, lighter beneath. Abdomen yellowish white dorsally with usual "punctures"; spines reddish; sides with alternating, narrow, black and yellowish-white stripes bordering the longitudinal grooves; posterior surface essentially the same. Color pattern probably variable in a large population.

Type locality. The holotype female is from Port-of-Spain, Trinidad, W. I., April 1913 (R. Thaxter).

Other records. Six paratype females were collected with the holotype from Mt. Tucuche, Trinidad, April 1929 (P. J. Darlington, Jr.). A female in the British Museum (Natural History) thought to belong to this species, was collected by Capt. A. K. Totten of H.M.S. Rodney, January 2, 1931, in Maracas Valley, Moran Pool, Trinidad. The male is not known.

MICRATHENA LEVII sp. nov.

Figures 35-40

Male holotype. Total length 3.8 mm. Carapace 1.69 mm long; 1.41 mm wide opposite interval between second and third coxae where it is widest; much narrowed at posterior border; smoothly rounded along margins and dorsum; median fovea hardly discernible; not overlapped by anterior border of abdomen.

Eyes. Lateral ocular tubercles moderately well developed; central ocular tubercle also moderately well developed with AME extended forward to make clypeus very receding. Viewed from above, both rows rather strongly recurved; viewed from in front, anterior row gently recurved, posterior row definitely procurved, all measured from center. Central ocular quadrangle wider behind than in front in ratio of nearly 3:2; wider behind than long in ratio of about 27:22. Ratio of eyes AME:ALE:PME:PLE = 6.5:6:8:5. AME separated from one another by nearly their diameter, from ALE by about three times their diameter, from PLE by nearly 2.5 times their diameter. Laterals separated from one another by about one-third of the diameter of PLE. Height of clypeus equal to about 2.7 times the diameter of AME.

Sternum. Only slightly convex; finely rugulose; with the usual sparse covering of stiff bristles; scutiform in general but continued between all coxae; fourth coxae separated by about two-fifths of their width.

Legs. 4123. Width of first patella at knee 0.15 mm, tibial index of first leg 14. Width of fourth patella at knee 0.12 mm, tibial index of fourth leg 12.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.19	0.40	0.68	0.66	0.44	3.37
II.	1.17	0.37	0.62	0.59	0.40	3.15
III.	0.73	0.29	0.46	0.40	0.33	2.21
IV.	1.32	0.33	0.68	0.73	0.42	3.48
Palpus	0.27	0.13	0.14	—	0.62	1.16

The length of the palpal tarsus as given in the above table includes the extended basal hook. There is no ventral hook on the first coxa and no chitinized, prolateral ridge and groove on the second femur as so often occurs in this genus. The ventral spines on the first and second tibiae are shown in Figures 36-37. Trichobothria on the dorsal surfaces of the tibiae are apparently arranged in two rows.

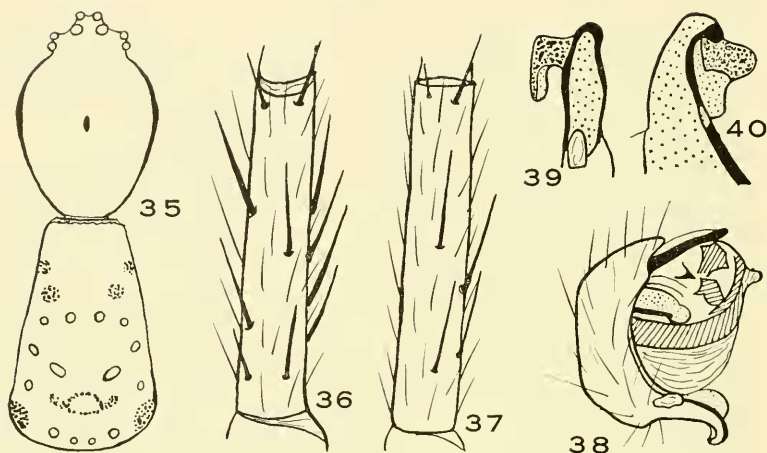
External Anatomy of *Micrathena*Figures 35-40, *M. levii*

Fig. 35. Body of male, dorsal view.

Fig. 36. Left first tibia, ventral view.

Fig. 37. Left second tibia, ventral view.

Fig. 38. Left palpal tarsus.

Figs. 39-40. Two different views of palpal basal tarsal hook.

Palpus. Figures 38-40. I have not seen this type of basal tarsal hook in any other species. Both tibia and patella are short with the tibia relatively very broad and somewhat trilobed.

Abdomen. Figure 35. Moderately flattened dorsoventrally with no distinct indication of suppressed spines.

Color in alcohol. Legs medium brown with variations. Carapace medium brown with fine, irregular, dark dots. Sternum brownish with irregular, white, deposits. Abdomen dorsum yellowish with irregularly placed, white spots; as indicated in Figure 35 there is a series of irregular grayish spots also on the dorsum; the venter in front of genital groove and the sclerotized ring around the spinnerets are brown, but behind the genital groove the color is yellowish with irregular gray lines and spots.

Type locality. Male holotype is from Simla, Trinidad, W.I. February 26, 1959 (A. M. Nadler). The female is unknown.

MICRATHENA MILITARIS (Fabricius), 1775

Figures 41-50

Aranea militaris Fabricius, 1775. Holotype from America. Probably in the Copenhagen Natural History Museum.

Plectana militaris, Walckenaer, 1841.

Micrathena militaris, Petrunkevitch, 1911; Reimoser, 1917; Petrunkevitch, 1926, 1930; Bryant, 1940; Roewer, 1942; Bryant, 1945; Bonnet, 1957.

Micrathena armata, Bryant, 1940, 1945 [not *Aranea armata* Olivier].

Much confusion has existed concerning the status of what is generally regarded as *M. militaris*. The species has often been filed in collections as *M. sagittata* and *M. forcipata* (Thorell), frequently as *M. militaris*. Miss Bryant regarded *M. armata* (Olivier) as a synonym of *M. militaris*, and her conclusion has generally been followed. Dr. Petrunkevitch (1926) may have had the species from the Virgin Islands but his figure of the epigynum does not agree with the specimens I have studied from Cuba, Haiti, and the Dominican Republic. I am not able to clarify the confusion but I can point out certain inconsistencies. I have noted in the epigyna significant differences between typical females from Cuba and specimens from Haiti and the Dominican Republic. These differences may be observed by a comparison of Figures 42-44 with Figures 45-47. Miss Bryant (1940) described what she regarded as the male of the species; some have doubted the validity of her identification, but, after examination of several males from Haiti, the Dominican Republic, and Puerto Rico, taken with females from these same regions, I am ready to accept her conclusion until we have definite evidence to the contrary. I have been unable to find males from Cuba that can be definitely associated with females from that island, and this again emphasizes the need for intensive field work in the whole West Indian region.

Females. Total length of a specimen from Cuba is 7.61 mm from AME to posterior border of abdomen between the large posterior spines; total length from anterior border of somewhat gibbous bases of chelicerae to the tips of the posterior spines 11.83 mm. Considerable variation in size of mature females has been noted. The two pairs of spines shown in Figure 41 and in Petrunkevitch's figure (1926) are those to which reference is usually made. Frequently, however, a pair of very small dorso-lateral spines occurs about half way between the bases of the long, posterior spines and the much smaller, very erect anterodorsal spines. Less frequently another very small spine occurs at about the base of each of the large posterior spines and is directed

posteriorly. The promargin of the fang groove on a fairly typical female from Haiti bears five teeth, three of which are relatively small and placed somewhat irregularly; the retromargin bears three teeth of moderate size, regularly placed. The Cuban specimen chosen to show the features of the epigynum has four teeth on the promargin and three on the retromargin. Females frequently have an embolus and accompanying sheath caught in one receptacle, and, occasionally, an embolus in each receptacle, an occurrence first reported for this species by Petrunkevitch in his study of the species in Puerto Rico. The sternum is rugulose; it has three pairs of prominent tubercles and terminates in a prominent, median, extended, conical tubercle. The most puzzling variations of all concern the epigynum: Figures 42-44 show its appearance in a female selected from many specimens collected in the Dominican Republic, viewed in three different positions; Figures 45-47 show its appearance in a female collected in Havana, Cuba. My brief study of numerous specimens from several islands in the West Indies certainly suggests the possibility that what is now regarded as one species may, upon further study, be divided into two or more.

External Anatomy of *Micrathena*

Figures 41-44, *M. militaris*

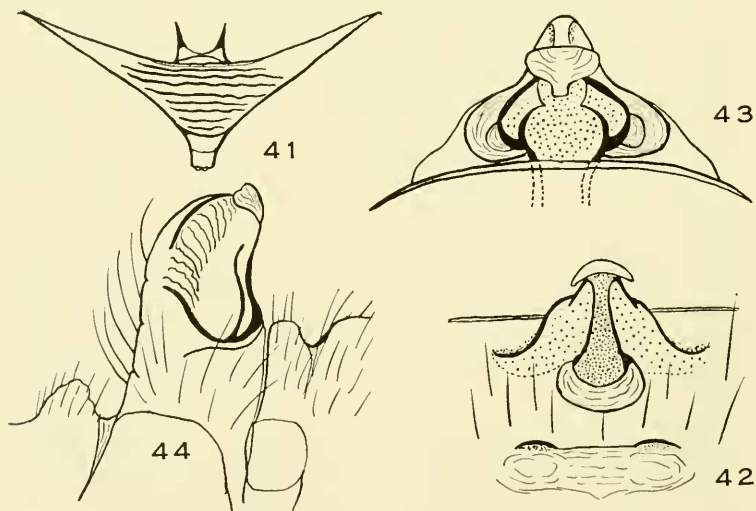
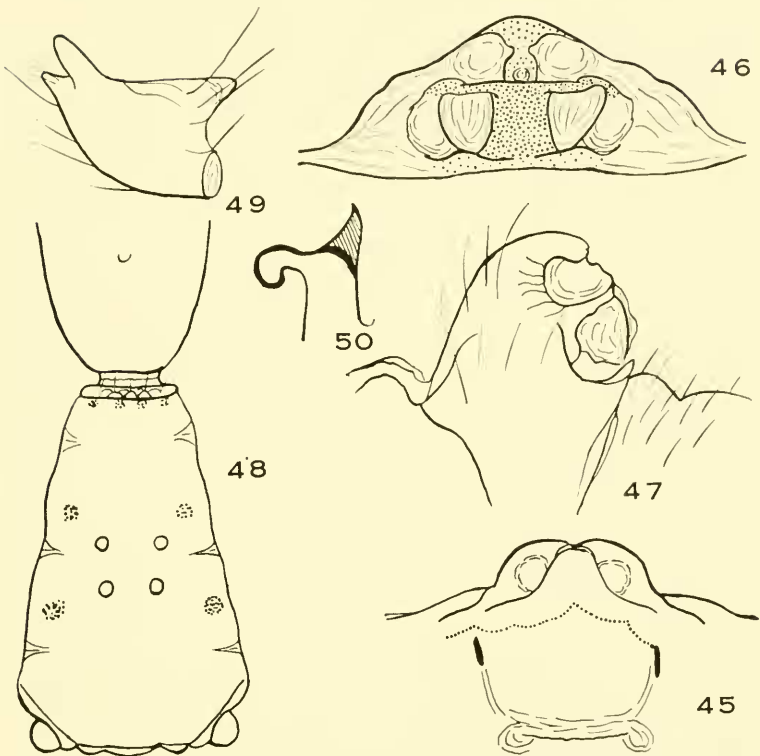


Fig. 41. Abdomen viewed from posterior end.

Figs. 42-44. Epigynum from below, in posterior view, and in profile from right side, respectively (Fig. 44 more enlarged).

External Anatomy of *Micrathena*Figures 45-50, *M. militaris*

Figs. 45-47. Epigynum from below, in posterior view, and in profile from right side, respectively (specimen from Cuba).

Fig. 48. Dorsal view of abdomen of male.

Fig. 49. Left palpal tibia.

Fig. 50. Left palpal basal tarsal hook.

Male. Total length 3.95 mm. The sternum is irregularly rugulose; the tubercles, so prominent in the female, are present but much less developed. The teeth along the fang groove differ from those of the female; the promargin appears to bear four teeth; the retromargin has four teeth with the distal two set very close together. Figure 48 shows the form of the abdomen as viewed from above. Figures 49-50 show the important features of the palpal tibia and basal tarsal hook. There is no ventral hook on

the first coxa and no corresponding chitinized ridge and groove on the second femur.

Collection records. The male described here and the female from which Figures 42-44 were taken, were collected at Jarabacoa, La Vega, Dominican Republic, May 11, 1959, by Drs. M. W. Sanderson and T. H. Farr. The female from which Figures 45-47 were taken was collected in Havana, Cuba, with no date indicated, and was originally identified as *M. armata* (Olivier). Numerous specimens have been studied from Cuba, Puerto Rico, Haiti, and the Dominican Republic.

MICRATHENA NITIDA sp. nov.

Figures 51-56

The males described below were, for a time, regarded as *M. macilenta* Chickering, described from Panama, but after a more careful study and direct comparison it now seems quite certain that we are dealing with a new, closely related species.

The name *nitida* is a Latin adjective meaning elegant.

Male holotype. Total length 4.03 mm. Carapace 1.6 mm long, 1.3 mm wide opposite interval between second and third coxae where it is widest; with eyes on moderately well-developed tubereles; the moderately well-developed median fovea is nearly a round pit; with no dorsolateral foveae; nearly flat along the middle from PME to posterior declivity; very finely granulated.

Eyes. Posterior row only slightly wider than anterior row. Viewed from above, both rows strongly recurved. Viewed from in front, anterior row nearly straight, posterior row moderately procurved, all measured from center. Ratio of eyes AME:ALE:PME:PLE = 5.5:5:7.5:5. AME separated from one another by slightly more than their diameter, from ALE by slightly less than three times their diameter. PME separated from one another by five-sevenths of their diameter, from PLE by about twice their diameter. LE separated from one another only by a broad line. Central ocular quadrangle wider behind than in front in ratio of about 6:5; about as long as wide behind. Clypeus very receding; height of clypeus equal to about twice the diameter of AME.

Sternum. Generally oval in outline with the usual scalloped margin; extended between fourth coxae, which are separated by about three-fourths of their width.

Legs. 1423. Width of first patella at knee 0.13 mm, tibial index of first leg 11. Width of fourth patella at knee 0.11 mm, tibial index of fourth leg 11.

External Anatomy of *Micrathena*
 Figures 51-56, *M. nitida*

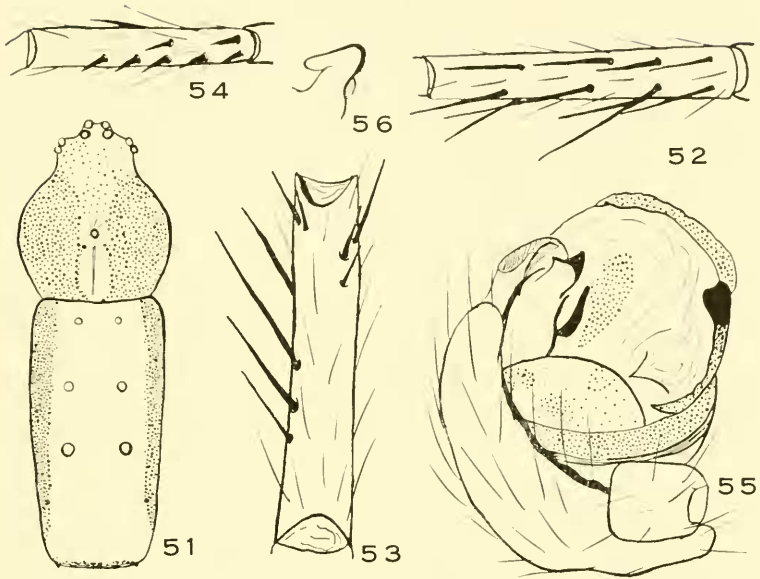


Fig. 51. Body of male, dorsal view.

Figs. 52, 54. Left first and second tibia, respectively, ventral view.

Fig. 53. Left first femur, ventral view.

Fig. 55. Left palpal tibia and tarsus.

Fig. 56. Palpal basal tarsal hook, nearly posterior view.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.25	0.39	0.81	0.70	0.40	3.55
II.	1.10	0.37	0.60	0.55	0.35	2.97
III.	0.73	0.29	0.37	0.37	0.29	2.05
IV.	1.32	0.33	0.65	0.70	0.39	3.39
Palpus	0.26	0.12	0.14	—	0.48	1.00

First leg with many long robust spines on femur and tibia (Figs. 52-53); second leg with short robust spines on tibia (Fig. 54); first coxa with a ventral hook and second femur with the corresponding prolateral ridge and groove, all moderately well developed; fourth leg with long spines on femur, patella, and tibia, but less developed than on first and second legs; a few other spines also present. Two trichobothria observed on the dorsal side of all tibiae.

Palpus. Details rather closely resemble those of palpi of several other species, but there are specific differences somewhat difficult to represent adequately in drawings (Figs. 55-56).

Abdomen. Much flattened in the manner common among males in this genus; with general form as shown in Figure 51; with obscure indications of suppressed spines at posterior end.

Color in alcohol. Legs and mouth parts with varying shades of light brown and yellowish brown. Carapace medium brown with black flecks except for a light stripe extending posteriorly from the median fovea. Abdomen: dorsum yellowish with a narrow dark marginal stripe on each side; venter yellowish with a narrow dark lateral stripe.

Type locality. The holotype male is from Trinidad, W.I., near Port-of-Spain, April, 1913 (R. Thaxter). Several paratype males are in the collection from Trinidad; one is from Sangre Grande, April, 1913 (R. Thaxter); another is from Port-of-Spain, February, 1926 (W. S. Brooks); the remainder are from the same locality as the holotype and, apparently, taken at about the same time.

MICRATHENA PRAETERITA sp. nov.

Figures 57-63

The holotype described here together with numerous paratypes came to me identified as *M. bicolor* (Keyserling). There are superficial resemblances, but the details of structure indicate clearly that these specimens do not belong with Keyserling's species. During my period of work in the British Museum (Natural History) in 1958 I was able to study Keyserling's types of *M. bicolor*. This acquaintance has helped me to determine that the species has never been described. The specific name *praeterita* is a Latin adjective meaning not noticed.

Female holotype. Total length, including the slightly extended bases of the chelicerae 4.75 mm. Carapace 1.7 mm long; 1.01 mm wide opposite posterior border of second coxae where it is widest; with indistinct median fovea a short, shallow groove; with no special features; without dorsolateral foveae; cephalothoracic groove very indistinct.

Chelicerae. Moderately well developed; without special modifications; typical of females of the genus; fang groove well defined; in a paratype the promargin of the fang groove has three teeth, the middle one of which is considerably the largest; the retromargin also has three teeth in this paratype, with the one nearest the base of the fang somewhat the largest.

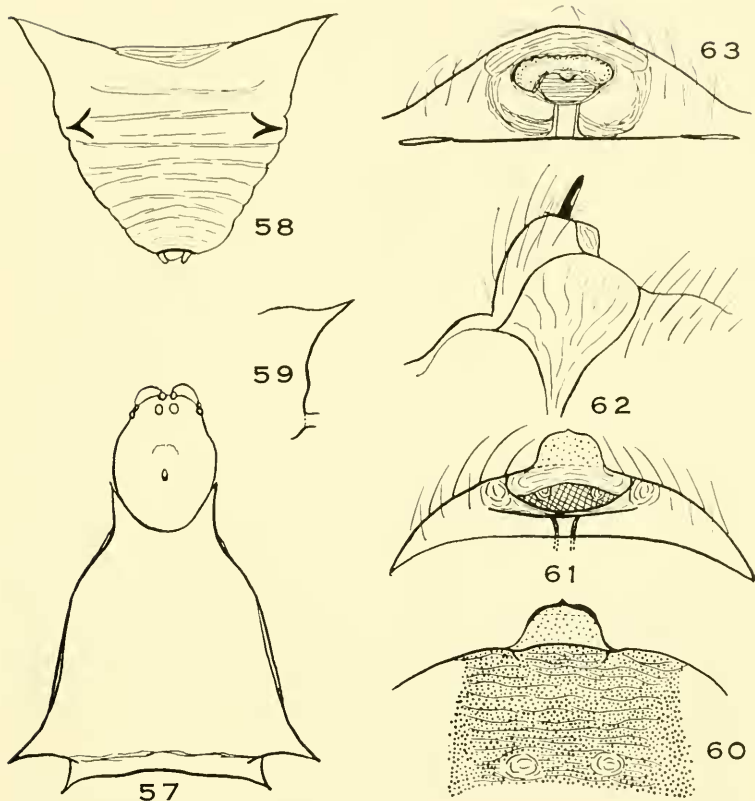
External Anatomy of *Microthema*Figures 57-63, *M. praeterita*

Fig. 57. Body of female, dorsal view.

Fig. 58. Posterior end of abdomen.

Fig. 59. Lateral view of right anterior abdominal spine.

Figs. 60-62. Epigynum of holotype from below, in posterior view, and in profile from right side, respectively.

Fig. 63. Appearance of epigynum after loss of thin, projecting shelf.

Maxillae. Short, broad, parallel; also typical of females of the genus.

Lip. Wider than long in ratio of about 9:5; does not quite reach to middle of maxillae.

Sternum. Scutiform in general; sternal suture strongly pro-curved; moderately convex; not continued between coxae; terminates in a point at beginning of space between fourth coxae, which are separated by nearly one-fourth of their width.

Legs. 4123. Width of first patella at knee 0.21 mm, tibial index of first leg 15. Width of fourth patella at knee 0.21 mm, tibial index of fourth leg 14.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.38	0.53	0.86	0.81	0.54	4.12
II.	1.28	0.48	0.77	0.75	0.53	3.81
III.	0.92	0.35	0.53	0.44	0.35	2.59
IV.	1.65	0.51	0.95	0.99	0.62	4.72

The palpal claw is finely pectinated. Spines are nearly absent from the legs; setigerous tubercles are moderately well developed. Trichobothria have been clearly observed only on the tibiae.

Abdomen. Figures 57-59. The three pairs of spines resemble those of some other species, but there are also distinctive features among these. Additional spines, frequently found in certain other species, are either rare or lacking altogether in this species.

Epigynum. Figures 60-62 illustrate the holotype. Note that the thin shelf extending ventrally from beneath the ventral border is frequently lacking in paratype, presumably because of breakage. In paratypes that have lost this part the superficial appearance of the organ is quite different. Figure 63 is intended to show the appearance of the epigynum in posterior view on an individual that has lost the shelf and probably was also under greater internal pressure than was the holotype.

Color in alcohol. The legs are medium brown with variations. Mouth parts are much the same. The carapace is brown with radiating darker streaks and a darker median stripe leading from PME nearly to the median fovea. All of these marks are poorly defined. The sternum is brownish with dark streaks and spots throughout. Abdomen with a white, black and brown color pattern difficult to describe adequately; the dorsum has an elongated white spot along the posterolateral side of each of the anterior spines; a narrow, irregular, brown stripe extends along the median side and dorsal surface of each of the anterior spines and reaches back nearly to the middle of the dorsum; an irregular white stripe extends between the two anterior spines and along the middorsal surface to nearly opposite the bases of the large posterior spines; lateral to these marks there is a mixture of white and brown

patches; between the bases of the large posterior spines there is a transverse row of five white patches; the venter has a broad, black stripe extending from the genital groove and dividing to extend dorsally for a considerable distance as a pair of black stripes directed toward the small posterior spines. Considerable variation in the color pattern has been noted among the paratypes as would be expected. For example, the irregular white stripe in the dorsum of the holotype may be broken into white spots by encroachment of the brown color that laterally bounds the white: the brown color may be reduced with an increase in the white until the latter predominates.

Type locality. The female holotype is from St. Augustine, Trinidad, W.I., September 18, 1946 (R. H. Montgomery). Nineteen paratype females were, apparently, collected with the holotype. The male is unknown.

MICRATHENA RUFOPUNCTATA (Butler), 1873

Figures 64-67

Acrosoma rufopunctatum Butler, 1873. Holotype from Jamaica, sex not indicated, in British Museum (Nat. Hist.).

Micrathena rufopunctata Petrunkevitch, 1911; Reimoser, 1917; Roewer, 1942; Bonnet, 1957.

The author of this species gave a very inadequate description unaccompanied by figures. Reimoser (1917) merely repeated the original description. There has never been any detailed description published.

Female. Total length 5.85 mm, including the bases of the somewhat convex chelicerae and relatively long posterior abdominal spines. Carapace: largely overlapped by extended dorsal portion of abdomen and anterior spines; median thoracic fovea a small, rounded pit; with a series of faintly indicated dorsolateral foveae.

Eyes. Viewed from above, anterior row moderately recurved, posterior row slightly so. Viewed from in front, anterior row slightly recurved, posterior row moderately procurved, all measured from center. Central ocular quadrangle wider behind than in front in ratio of 25 : 21; wider behind than long in ratio of 25 : 23. Ratio of eyes AME : ALE : PME : PLE = 7.5 : 6.5 : 8.5 : 6. AME separated from one another by slightly less than their diameter, from ALE by about four times their diameter. PME separated from one another by nearly seven-sixths of their diameter, from PLE by slightly more than three times

their diameter. Laterals separated from one another by about one-third of the diameter of PLE. Height of clypeus about equal to the diameter of AME.

Sternum. A simple scutiform; sternal suture slightly procurved; with anterolateral tubercles moderately developed; with a minute tubercle opposite each coxae 1-3 and another minute tubercle at blunt posterior end, which is not extended between fourth coxae; fourth coxae separated by about one-third of their width.

Legs. 4123. Width of first patella at knee 0.25 mm, tibial index of first leg 15. Width of fourth patella at knee 0.21 mm, tibial index of fourth leg 14.

External Anatomy of *Micrathena*

Figures 64-67, *M. rufopunctata*

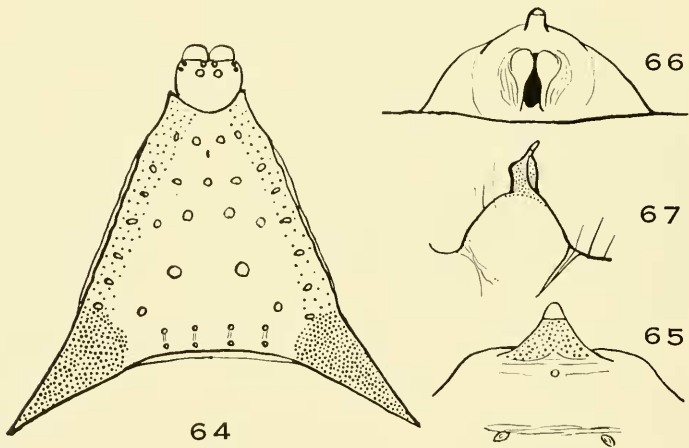


Fig. 64. Body of female, dorsal view.

Figs. 65-67. Epigynum from below, in posterior view, and in profile from right side, respectively.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
I.	1.54	0.62	1.01	1.08	0.53	4.78
II.	1.45	0.57	0.88	0.95	0.53	4.38
III.	0.97	0.40	0.53	0.55	0.44	2.89
IV.	1.76	0.55	0.92	1.10	0.48	4.81

Legs with numerous short, slender spines and many setigerous tubercles. Trichobothria observed on tibiae; doubtful elsewhere. Palpal claw finely toothed.

Abdomen. General form as viewed from above shown in Figure 64. There are only two pairs of spines and no indication of small accessory spines such as often appear in the genus. The anterior border and spines are extended far over the carapace.

Epigynum. In essential features, shown in Figures 65-67, epigynum closely resembles that of *M. mitrata* (Hentz), *M. cubana* (Banks), *M. macfarlanei* Chickering, *M. fidelis* (Banks) and probably others.

Color in alcohol. The color pattern on the abdomen is distinctive. The carapace, mouth parts, and legs are all rich reddish brown with variations. The sternum is dark brown. Abdomen: The dorsolateral sides are bright yellow; this marginal stripe includes the anterolateral spines but stops at the bases of the posterolateral spines; there is also a yellow marginal stripe extending along the posterior border between the two posterolateral spines; the latter spines themselves are rich reddish brown; the remaining dorsal region is grayish, darker around the border, and almost white in the center; the lateral and ventral areas are predominantly very dark brown, almost black; the venter has three pairs of bright yellow spots introduced into the brown background; the most anterior pair of these yellow spots is at the level of the epigynum; the second pair at about the level of the spinnerets; the third pair is near the posterior border. I have seen no color pattern like this among the many species in the genus studied during the past several years.

Collection records. The original specimens were reported from Jamaica, W.I., in 1873. So far as I have been able to determine, the species has not been reported from that time until the present. Three females in the American Museum of Natural History were taken by Dr. T. H. Farr, Institute of Jamaica, Kingston, Jamaica, W.I., at the entrance to Mt. Diablo Forest Reserve, June 29, 1960. The male remains unknown.

MICRATHENA SIMILIS Bryant, 1945

Figures 68-71

Micrathena similis Bryant, 1945. Female holotype from Dominican Republic, Puerta Plata, 30 August, 1938, in the Museum of Comparative Zoology.

This species has been under close scrutiny for some time and its

validity as a distinct species is still uncertain. Miss Bryant considered it closely related to *M. cubana* (Banks). It should be re-studied when a large series is available. Three specimens are known to me: the holotype, a paratype female from the Dominican Republic, Mt. Diego de Ocampo, North Range, 3000-4000 ft. el., July, 1938 (P. J. Darlington, Jr.); one female from Dominican Republic, Valle de Polo, Prov. de Barahona, August 18, 1935 (W. G. Hasler). The male remains unknown. The epigynum appears quite different than represented by Miss Bryant's figures 8 and 43 (1945).

External Anatomy of *Micrathena*

Figures 68-71, *M. similis*

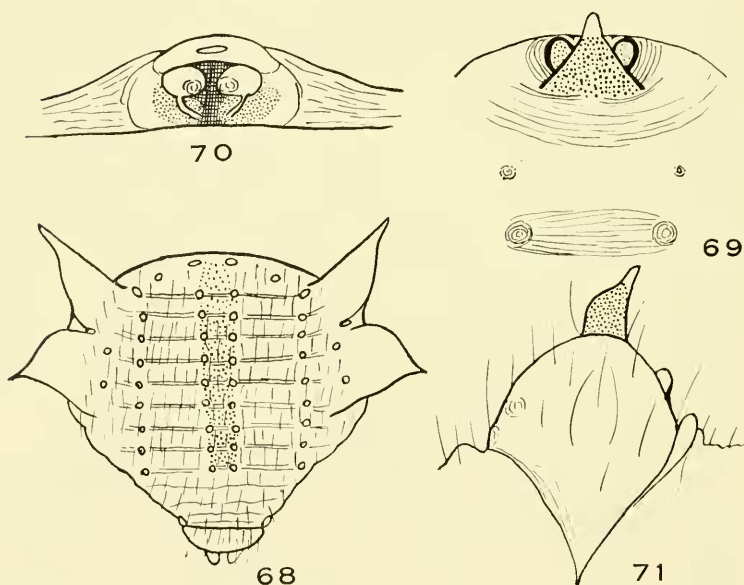


Fig. 68. Posterior end of abdomen from behind.

Figs. 69-71. Epigynum from below, in posterior view, and in profile from right side, respectively.

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